PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Current therapy for the upper-limb after stroke: a cross-sectional survey of UK therapists
AUTHORS	Stockley, Rachel; Peel, Rosemary; Connell, Louise; Jarvis, Kathryn

VERSION 1 – REVIEW

REVIEWER	Teresa J Kimberley, PT, PhD MGH Institute of Health Professions, Boston, MA, USA
REVIEW RETURNED	04-Apr-2019

GENERAL COMMENTS	This topic is an important one and the goal of attempting to document the types of stroke rehab activities is a good goal. It is particularly relevant because there has been numerous articles and reports attempting to change the standard practice and understanding how practice has changed since those recommendations would be an important contribution to the literature. However, this manuscript falls short of that goal. The authors do not make a compelling case for how this limited survey represents the state of rehabilitation in stroke the UK, with only 85 and 69 people from PT and OT respectively. There are severe limitations in the survey methodology and problems with recall to accurately reflect activity. The methods are inferior to the other more comprehensive assessments done observing and documenting types and amount of therapy. As a minor note, it is not clear why the finding of 'additional activities' was reported. In this reviewer's experience, this is a common practice.

REVIEWER	Kate Hayward, Senior Research Fellow University of Melbourne, Australia
REVIEW RETURNED	28-Apr-2019

GENERAL COMMENTS	Thank you for the opportunity to review this paper reporting on a survey of clinician practice in regards to upper limb therapy post stroke in the UK. There is a need for better description and development of "standard care" in clinical trials that reflects clinical practice. The current survey progresses the field closer to achievement of this goal. Main comments: - Please be consistent in use of TIDierR terms of Who Where What and How Much; there are some instances where 'when' is used and others where it is not, also frequency and intensity replace 'how much'.

	- Introduction pg3 ln39: results of a pubmed search are highlighted, however could you use Cochrane reviews that have been updated or VanPeppen 2004/Veerbeek 2014 papers to demonstrate this point with greater rigour? - The analysis of interval level data was performed with means and standard deviations, however was the data always normally distributed e.g., year post qualification? If not, consider using median and range. - Two respondents were excluded: can you add discipline and years post practice to contextualise these respondents? - Can you provide the frequency of intervention responses for all interventions asked in the survey in supplemental tables? This would allow comparison of all guideline recommendations with response frequencies. - Can the number of respondents addressing certain domains of analysis be stated clearly. E.g., Duration Table 4 n=74 which is almost half of respondents. What is the potential bias of this on the outcomes? Can you complete statistical analysis to investigate the impact of dropouts across survey progression to demonstrate that dropouts are random (as compared to a specific discipline or cohort based on years post qualification)? - Discussion: the response of the proportion of patients treated as mild/mod/sev in results (see pg5, ln57) could be discussed in comparison to population based studies e.g., Nakayama 1994/Perrson 2012 (BMC Neurology). - Discussion: sources of possible bias could be discussed e.g., the high average years of practice (16.9yrs), the higher PT frequency, the dropouts throughout survey etc. Other comments: - Please review the use of "median average" and "mean average" throughout the paper e.g., see PDF page 7 line 50, page 8 line 7. It would clearer to state e.g., spending a mean time of 28.4 minutes ... - Point of clarification in the discussion (pg 9, line 6), the SR reported on activity related therapy only. This might provide some further clarification regarding the difference in time reported by therapists and the review paper. - Minor grammatical errors throughout e.g., amend to: pg 10, ln 43 "Future work could seek to identify" or pg 3, ln 34 "...means it cannot be determined ...". Please review on editing the manuscript. Thank you. - Fig 1 is hard to see in grayscale, consider publishing in colour. Also, what n does each pin represent (query n=1)?

REVIEWER	Gabrielle McHugh Webster University Cha-Am, Thailand campus
REVIEW RETURNED	05-Jun-2019

GENERAL COMMENTS	From the results section it seems functional electrical stimulation is only provided to those with severe deficits. This seems contrary to what is reported in the literature and in practice. Maybe the authors could address. Line 42 needs correcting

REVIEWER	Lynette Mackenzie University of Sydney Australia
REVIEW RETURNED	02-Jul-2019

GENERAL COMMENTS	Thank you - I have enjoyed reading this paper. I was especially impressed with your discussion on the need to define usual practice as a basis for later trial comparing a new intervention. I only have very minor comments to make: Line 19 page 2 - not sure of the word contemporaneous here - something simpler like "current" might be less clunky. Line 36 page 3 - add "do" to but do not provide..... Line 10 page 4 replace "note" with noting Line 24 page 5 - please refer to occupational therapists and physiotherapists Line 31-35 page 5 - please quote percentages as well as numbers (this is done elsewhere). Line 31 page 8 replace "worth of note" with noteworthy Line 34 page 8 replace "indicating" with suggesting - you don't know if there was a bias there or not. Line 2 page 9 review not reviews Line 13-15, line 40, line 45 page 9 are presenting results in the discussion. Discussion In the discussion about better outcomes with longer and more intense interventions - I wonder if a mention of the trend to use robotics for repetitive movements would be appropriate here? I was also wondering what respondents defined as functional training - especially as they listed the treatments themselves - this means you have no real way of knowing if all the respondents mentioning this were talking about the same thing. I also wondered the extent to which some treatments were mutually exclusive. I wasn't sure what was meant by an expert panel assimilating data on line 46 of page 9. I would imagine an expert panel would be seeking consensus but in a more defined way that a cross sectional survey. The issues discussed about the low rate of treatments offered to people with a severe upper limb deficit did not take into account workload constraints for therapists who may be forced to prioritise people with less severe presentations with whom the most benefit could be obtained in the time available. A valuable paper - well done!

VERSION 1 – AUTHOR RESPONSE

Responses to Reviewer 1

Responses to this reviewers' comments are highlighted in green

Reviewer comment	Response
The authors do not make a compelling case for how this limited survey represents the state of rehabilitation in stroke the UK, with only 85 and 69 people from PT and OT respectively.	Page 9 Lines 10, 13, 26-33 The limitations of the findings based on the sample size and self report are highlighted Lines 30 page 9 - The likelihood of selection bias is discussed and acknowledged
There are severe limitations in the survey methodology and problems with recall to accurately reflect activity.	Line 32-33 page 9. The effect of recall and over-reported are explicitly highlighted. Line 8 page 10 the limitation of self report is highlighted again.
The methods are inferior to the other more comprehensive assessments done observing and documenting types and amount of therapy.	Lines 46-6 pages 3-4 – In the introduction we highlight why the survey tool was chosen with direct reference to other methods and highlight the objective nature of observed studies. Line 26-29 page 9 - We acknowledge that other methods can objectively capture treatment content and frequency and directly compare our findings to these studies
As a minor note, it is not clear why the finding of 'additional activities' was reported. In this reviewer's experience, this is a common practice.	We agree with the reviewer that 'additional activities' frequently form part of routine care, yet are rarely described or included in studies defining therapy after stroke. Therefore we have included an explicit description of what they were to provide a detailed and contemporaneous description of therapy for the upper limb after stroke.

Response to Reviewer 2

Responses to this review are highlighted in yellow

Reviewer comment	Response
Please be consistent in use of TIDierR terms of Who Where What and How Much; there are some instances where 'when' is used and others where it is not, also frequency and intensity replace 'how much'.	Line 21-22, & Line 31,32, 34-36 Page 4 - Where, what who and how much have been added in brackets for clarity and to ensure congruency with the TIDieR checklist and all sections throughout the article
Introduction – the results of a Pubmed search are highlighted however could you use Cochrane reviews that have been updated or VanPeppen 20014/Veerbeek 2014 papers to demonstrate this point with greater rigour	Line 29-33 page 3 -The numbers of papers in a recently repeated Cochrane review are now added to the Pubmed search results to strengthen this point.
Two respondents were excluded: can you add discipline and years post practice to contextualise these respondents?	Line 35, page 5 – Profession now added but other data not able to be added as respondents did not provide these details.
Can you provide the frequency of intervention responses for all interventions asked in the survey in supplemental tables? This would allow comparison of all guideline recommendations with response frequencies.	These have now been added
The analysis of interval level data was performed with means and SDs, however was the data always	Line 16 page 5 – Analysis - the testing for normality of these interval level data has

normally distributed e.g. year post qualification ? if not please consider using median and range	been added in. Lines 39,40 page 5 – Results - median averages are now used where testing of the data indicated that it was not normally distributed as outlined above.
Can the number of respondents addressing certain domains of analysis be stated clearly. E.g., Duration Table 4 n=74 which is almost half of respondents. What is the potential bias of this on the outcomes? Can you complete statistical analysis to investigate the impact of dropouts across survey progression to demonstrate that dropouts are random (as compared to a specific discipline or cohort based on years post qualification)?	The number of respondents is now clearly reported in each table and text as appropriate. Table 4 (page 8) has fewer respondents (n=74, now included) as these data were only from respondents spending over 75% of their time in each clinical area. This has now been explained under the table (line 14/15). All other tables/text show number of responses where appropriate. There were very few drop outs identified (<5) for items where frequency data were reported so no analysis of drop outs were undertaken.
Discussion: the response of the proportion of patients treated as mild/mod/severe in results (pg 5 ln57) could be discussed in comparison to population based studies	Lines 20-24 page 9 This has now been addressed and compared to published literature in the discussion.
Discussion: sources of possible bias could be discussed e.g. the high average years of practice, higher frequency of PT, dropouts	Lines 17 page 9 – the additional sources of bias, in addition to self-report, including relatively long time since qualification and slightly greater number of physiotherapist respondents are now mentioned as a potential source of bias
Other comments: median and mean average – it would be clearer to state ‘mean time’	This has been altered throughout and highlighted.
Point of clarification in the discussion – the SR reported on activity related therapy only.	This has been changed to read: upper-limb activity and/or other treatments and an additional sentence added to discuss ambiguities around what might constitute therapy (Lines 28-29, page 9, lines 33-37 page 9).
Minor grammatical errors	These have been remedied throughout.
Figure 1 would look better in colour and please show what each pin represents	The figure is now submitted in colour and a key included to show what each pin represents (line 1 page 6).

Response to Reviewer 3

Responses to this review are highlighted in magenta

Reviewer comment	Response
From the results it seems that FES is only provided to those with severe deficits. This seems contrary to wat is reported in the literature and in practice. Maybe the authors could address	FES is not recommended in the UK guidelines for stroke which may explain its relatively low uptake. However, an additional sentence has been added to highlight that FES (and mental practice) were not widely reported to be used despite having an evidence base (Lines 18-19 page 10)

Response to Reviewer 4

Responses to this review are highlighted in blue

Reviewer comment	Response
Line 19 page 2 - not sure of the word contemporaneous here - something simpler like "current" might be less clunky. Line 36 page 3 - add "do" to but do not provide..... Line 10 page 4 replace "note" with noting Line 24 page 5 - please refer to occupational therapists and physiotherapists Line 31-35 page 5 - please quote percentages as well as numbers (this is done elsewhere). Line 31 page 8 replace "worth of note" with noteworthy Line 34 page 8 replace "indicating" with suggesting - you don't know if there was a bias there or not. Line 2 page 9 review not reviews Line 13-15, line 40, line 45 page 9 are presenting results in the discussion.	These have all been corrected and deleted as indicated.
In the discussion about better outcomes with longer and more intense interventions - I wonder if a mention of the trend to use robotics for repetitive movements would be appropriate here?	This would have been appropriate when the paper was reviewed, however, in light of the negative findings of robotics in the recently published RATULS trial (Rodgers et al 2019), it appears robotics may not provide the answer to increasing intensity. Therefore, this has not been mentioned here.
I wasn't sure what was meant by an expert panel assimilating data on line 46 of page 9. I would imagine an expert panel would be seeking consensus but in a more defined way that a cross sectional survey.	In the cited study, a survey of stroke units was undertaken, and then results assimilated and interpreted by an expert panel. This has now been rephrased to add clarity (Line 31 page 10)
The issues discussed about the low rate of treatments offered to people with a severe upper limb deficit did not take into account workload constraints for therapists who may be forced to prioritise people with less severe presentations with whom the most benefit could be obtained in the time available.	This is a valid point, but the findings did not show that there was less treatment offered to people with severe upper-limb deficits after stroke, rather that there was a greater diversity (lower consensus) in the treatments offered to them. This is unlikely to be unduly altered by therapist workload but is more likely to be influenced by the lack of clear guidance and evidence for effective treatments for severe deficits.

VERSION 2 – REVIEW

REVIEWER	Kathryn Hayward University of Melbourne, Australia
REVIEW RETURNED	01-Sep-2019

GENERAL COMMENTS	The authors have addressed all comments within the updated manuscript. No further comments.

REVIEWER	Lynette Mackenzie University of Sydney Australia
REVIEW RETURNED	26-Aug-2019

GENERAL COMMENTS	The authors have addressed all the concerns brought forward by the reviewers